

Title (en)

Stacked multi-chip modules and method of manufacturing.

Title (de)

Gestapelte Mehrchip-Module und Verfahren zur Herstellung.

Title (fr)

Modules à plusieurs puces empilées et procédé de fabrication.

Publication

EP 0575051 A1 19931222 (EN)

Application

EP 93303792 A 19930517

Priority

US 88777492 A 19920522

Abstract (en)

A circuit assembly (20) which includes a semiconductor die (22) having substantially parallel opposing first (30) and second surfaces (28) and at least one electrical contact (32) mounted on the first surface (30). A first element (24) having substantially parallel opposing first (36) and second surfaces (34) and at least one electrical contact (38) mounted on one of its surfaces is mounted on and at least partially supported at its second surface (34) by the first surface (30) of the semiconductor die (22). The first element (24) is positioned such that the semiconductor die electrical contact (32) is exposed. A fine wire conductor (52) having first and second ends is connected at its first end to either the semiconductor die electrical contact (32) or the first element (24) electrical contact (38). The first element (24) can be an interconnect media or a semiconductor die, which is partially supported by the semiconductor die (22). The first element (24) can have holes (222,224) to expose at least one of the electrical contacts (236) of the semiconductor die (212). <IMAGE> <IMAGE>

IPC 1-7

H01L 25/065; **H01L 23/495**

IPC 8 full level

H01L 25/18 (2006.01); **H01L 23/495** (2006.01); **H01L 25/065** (2006.01); **H01L 25/07** (2006.01)

CPC (source: EP KR US)

H01L 23/49531 (2013.01 - EP US); **H01L 23/49575** (2013.01 - EP US); **H01L 23/538** (2013.01 - KR); **H01L 24/49** (2013.01 - EP US); **H01L 24/48** (2013.01 - EP US); **H01L 24/73** (2013.01 - EP US); **H01L 2224/023** (2013.01 - EP); **H01L 2224/05554** (2013.01 - EP US); **H01L 2224/32145** (2013.01 - EP US); **H01L 2224/32245** (2013.01 - EP US); **H01L 2224/48091** (2013.01 - EP US); **H01L 2224/48145** (2013.01 - EP US); **H01L 2224/48247** (2013.01 - EP US); **H01L 2224/4826** (2013.01 - EP US); **H01L 2224/48471** (2013.01 - EP US); **H01L 2224/4911** (2013.01 - EP US); **H01L 2224/49171** (2013.01 - EP US); **H01L 2224/73215** (2013.01 - EP US); **H01L 2224/73265** (2013.01 - EP US); **H01L 2225/06568** (2013.01 - EP US); **H01L 2924/00014** (2013.01 - EP US); **H01L 2924/01005** (2013.01 - EP US); **H01L 2924/01006** (2013.01 - EP US); **H01L 2924/01013** (2013.01 - EP US); **H01L 2924/01014** (2013.01 - EP US); **H01L 2924/01029** (2013.01 - EP US); **H01L 2924/01042** (2013.01 - EP US); **H01L 2924/01074** (2013.01 - EP US); **H01L 2924/014** (2013.01 - EP US); **H01L 2924/07802** (2013.01 - EP US); **H01L 2924/10161** (2013.01 - EP US); **H01L 2924/10162** (2013.01 - EP US); **H01L 2924/14** (2013.01 - EP US); **H01L 2924/15311** (2013.01 - EP US); **H01L 2924/181** (2013.01 - EP US); **H01L 2924/351** (2013.01 - EP US); **Y10T 29/49121** (2015.01 - EP US)

C-Set (source: EP US)

EP

1. **H01L 2224/48091 + H01L 2924/00014**
2. **H01L 2224/73265 + H01L 2224/32245 + H01L 2224/48247 + H01L 2924/00012**
3. **H01L 2224/73265 + H01L 2224/32145 + H01L 2224/48145 + H01L 2924/00012**
4. **H01L 2224/73265 + H01L 2224/32145 + H01L 2224/48247 + H01L 2924/00012**
5. **H01L 2224/73215 + H01L 2224/32245 + H01L 2224/4826 + H01L 2924/00**
6. **H01L 2224/49171 + H01L 2224/48247 + H01L 2924/00**
7. **H01L 2224/48247 + H01L 2224/48471 + H01L 2924/00**
8. **H01L 2224/48227 + H01L 2224/48471 + H01L 2924/00**
9. **H01L 2224/49171 + H01L 2224/48471 + H01L 2924/00**
10. **H01L 2224/4826 + H01L 2224/48471 + H01L 2924/00**
11. **H01L 2224/4826 + H01L 2224/49171 + H01L 2924/00**
12. **H01L 2924/07802 + H01L 2924/00**
13. **H01L 2924/351 + H01L 2924/00**
14. **H01L 2924/00014 + H01L 2224/45099**
15. **H01L 2924/00014 + H01L 2224/05599**
16. **H01L 2924/181 + H01L 2924/00012**
17. **H01L 2224/023 + H01L 2924/0001**

US

1. **H01L 2224/48091 + H01L 2924/00014**
2. **H01L 2224/73265 + H01L 2224/32245 + H01L 2224/48247 + H01L 2924/00012**
3. **H01L 2224/73265 + H01L 2224/32145 + H01L 2224/48145 + H01L 2924/00012**
4. **H01L 2224/73265 + H01L 2224/32145 + H01L 2224/48247 + H01L 2924/00012**
5. **H01L 2224/73215 + H01L 2224/32245 + H01L 2224/4826 + H01L 2924/00**
6. **H01L 2224/49171 + H01L 2224/48247 + H01L 2924/00**
7. **H01L 2224/48247 + H01L 2224/48471 + H01L 2924/00**
8. **H01L 2224/48227 + H01L 2224/48471 + H01L 2924/00**
9. **H01L 2224/49171 + H01L 2224/48471 + H01L 2924/00**
10. **H01L 2224/4826 + H01L 2224/48471 + H01L 2924/00**
11. **H01L 2224/4826 + H01L 2224/49171 + H01L 2924/00**
12. **H01L 2924/07802 + H01L 2924/00**
13. **H01L 2924/351 + H01L 2924/00**
14. **H01L 2924/00014 + H01L 2224/45099**
15. **H01L 2924/00014 + H01L 2224/05599**

16. **H01L 2924/181 + H01L 2924/00012**

Citation (search report)

- [X] PATENT ABSTRACTS OF JAPAN vol. 013, no. 564 (E-860)20 September 1989 & JP-A-01 235 363 (HITACHI LTD) 16 March 1988
- [X] PATENT ABSTRACTS OF JAPAN vol. 015, no. 405 (E-1122)16 October 1991 & JP-A-03 165 550 (HITACHI CABLE LTD) 17 July 1991
- [Y] PATENT ABSTRACTS OF JAPAN vol. 015, no. 514 (E-1150)27 December 1991 & JP-A-03 225 932 (KAWASAKI STEEL CORP) 4 October 1991
- [X] PATENT ABSTRACTS OF JAPAN vol. 012, no. 293 (E-645)10 August 1988 & JP-A-63 070 532 (HITACHI LTD) 30 March 1988
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Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0575051 A1 19931222; EP 0575051 B1 19990728; DE 69325749 D1 19990902; DE 69325749 T2 20000217; JP 3356821 B2 20021216; JP H0637250 A 19940210; KR 100282285 B1 20010215; KR 930024145 A 19931222; US 5422435 A 19950606; US 5495398 A 19960227; US 5502289 A 19960326

DOCDB simple family (application)

EP 93303792 A 19930517; DE 69325749 T 19930517; JP 12101693 A 19930524; KR 930008810 A 19930521; US 40306195 A 19950313; US 46281295 A 19950605; US 88777492 A 19920522